# El Paso Community College
# Syllabus
# Part II
# Official Course Description

**SUBJECT AREA**                                    **Information Technology Systems**

**COURSE RUBRIC AND NUMBER**               **ITSE 1329**

**COURSE TITLE**                                     **Programming Logic and Design**

**COURSE CREDIT HOURS**                         **3        3    :    1**
                                                          Credits  Lec     Lab

## I.    Catalog Description

Offers a disciplined approach to problem-solving with structured techniques and representation of algorithms using appropriate design tools. Discusses methods for testing, evaluation, and documentation. **(3:1).**

## II.   Course Objectives

Upon satisfactory completion of this course, the student will be able to:

A.    Unit I.  Programming Fundamentals and User Interface Design

1. Identify the essential concepts of computer programming.
2. Define computer programming language and list different languages
3. Differentiate procedural, event driven, and object oriented programming and programming conventions
4. Describe the Virtual Environment
5. Describe the planning and design process to create and write a project
6. Differentiate between syntax program errors, run-time errors, and logic program errors.
7. Practice teamwork strategies utilizing programming environment
8. Describe the Graphical User Interface (GUI) and the controls used within the interface
9. Analyze a problem; design a solution; and write, test, evaluate, and document the program.

B.    Unit II.  Calculations and Decisional Structures

1. Create assignment statements (calculations) utilizing variables, constants, mathematical operations, functions to develop code
2. Describe the differences in variable data types and their importance in various data needs and calculations.
3. Create message boxes for user interaction.
4. Format data for display in different control types.
5. Utilize the decision structures of the if-statement and the case-structure to test data and alter programming sequences.
6. Utilize data validation concepts and techniques to ensure the accuracy of data entry.
7. Utilize debugging tools to troubleshoot and identify program logic errors.

C.    Unit III.  Multiform Projects and Procedures

   1.    Create Windows style menus and related programming code for user-initiated commands.
   2.    Create Windows style dialog boxes and related programming code to accept command options from the user.
   3.    Write sub-procedures to manipulate data.
   4.    Write and explain function procedures.
   5.    Incorporate the use of multiple forms for user interaction.
   6.    Utilize methods and events of forms.
   7.    Describe the use of variables across forms.

D.    Unit IV.  Loop Structures and Lists

   1.    Utilize List Boxes and Combo Boxes for user input.
   2.    Use loop structures to control program sequence.
   3.    Describe the use of array structures to capture multi-level data.
   4.    Explain how endless loops develop.

E.    Unit V.  Arrays

   1.    Create single-dimension arrays.
   2.    Describe the use of For/Next structures in arrays.
   3.    Utilize arrays for data accumulation.
   4.    Use arrays for table lookup.
   5.    Create multidimensional arrays.

# III.    THECB Learning Outcomes (WECM)

1.    Identify the major concepts of structured programming.
2.    Illustrate the general concepts of structured design.
3.    Use design tools.
4.    Solve problems using logic techniques.
5.    Produce documented algorithms.

# IV.    Evaluation

A.  Pre-assessment

Students must have taken and completed ITSC 1301, "Introduction to Computers and Applications," prior to taking this course.

B.  Post-assessment

This course may contain programming assignments, quizzes, and exams. The instructor will determine the mix of graded instruments to arrive at a grade as further described in the Instructor Requirements document.

C.  Remediation

The instructor may provide the students with means of improving a grade. The instructor will determine the timing, form, and method of remediation.

V.    **Disability Statement (Americans with Disabilities Act [ADA])**

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI.    **6 Drop Rule**

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.